

CLAIMS

What is claimed is:

1. A customized polishing pad adapted for use in a wafer polishing machine, said customized polishing pad comprising:

a polishing pad adapted for use in a wafer polishing machine;

a polishing surface included in said polishing pad, said polishing surface adapted to frictionally contact a wafer in said wafer polishing machine;

a first region integral with said polishing surface, said first region adapted to frictionally contact said wafer, said first region adapted to achieve a first process effect; and

a second region integral with said polishing surface, said second region adapted to frictionally contact said wafer, said second region adapted to achieve a second process effect such that said wafer polishing machine achieves a customized process effect by selectively moving said wafer frictionally against said first region and said second region.

2. The customized polishing pad of claim 1 further comprising:

a first underlying layer included in said polishing pad, said first underlying layer adapted to achieve said first polishing effect in said first region; and

a second underlying layer included in said polishing pad, said second underlying layer adapted to achieve said second polishing effect in said second process effect in said second region.

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3. The customized polishing pad of claim 2 wherein said first underlying layer and said second underlying layer have differing amounts of hardness when said wafer is frictionally moved against said polishing pad by said wafer polishing machine.

4. The customized polishing pad of claim 2 wherein said first underlying layer and said second underlying layer have differing amounts of thickness when said wafer is frictionally moved against said polishing pad by said wafer polishing machine.

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5. The customized polishing pad of claim 2 wherein said first underlying layer and said second underlying layer form said polishing surface of said polishing pad.

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6. The customized polishing pad of claim 2 further comprising: an overlying layer included in said polishing pad, said overlying layer forming said polishing surface, said overlying layer coupled to said first underlying layer and said second underlying layer.

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7. The customized polishing pad of claim 6 wherein said polishing surface included in said overlying layer includes a first texture adapted to achieve said first polishing effect and a second texture adapted to achieve said second polishing effect.

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8. The customized polishing pad of claim 2 wherein said polishing pad is a circular polishing pad and said first region and said second region are concentric within said circular polishing pad.

9. The customized polishing pad of claim 2 wherein said polishing pad is a linear polishing pad and said first region and said second region are linearly adjacent within said linear polishing pad.

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10. A multi-region polishing pad adapted for use in a wafer polishing machine, said multi-region polishing pad comprising:

a polishing pad adapted for use in a wafer polishing machine;

10 a polishing surface included in said polishing pad, said polishing surface adapted to frictionally contact a wafer in said wafer polishing machine;

15 a plurality of regions integral with said polishing surface, said plurality of regions each adapted to frictionally contact said wafer, each of said plurality of regions adapted to achieve a specific process effect such that said wafer polishing machine achieves a multi-region process effect by selectively moving said wafer frictionally against said plurality of regions.

11. The multi-region polishing pad of claim 10 further comprising:

20 a plurality of underlying layers included in said polishing pad, said plurality of underlying layers corresponding to said plurality of regions, each of said plurality of underlying layers adapted to achieve said specific process effect in said plurality of regions.

25 12. The multi-region polishing pad of claim 11 wherein each of said plurality of underlying layers have differing amounts of hardness when said wafer is frictionally moved against said polishing pad by said wafer polishing machine.

13. The multi-region polishing pad of claim 11 wherein said plurality of underlying layers form said polishing surface of said polishing pad.

14. The multi-region polishing pad of claim 11 further comprising: an overlying layer included in said polishing pad, said overlying layer forming said polishing surface, and said overlying layer coupled to each of said plurality of underlying layers.

15. The multi-region polishing pad of claim 14 wherein said polishing surface included in said overlying layer includes a plurality of textures, each of said plurality of textures adapted to achieve said specific process effect.

16. The multi-region polishing pad of claim 11 wherein said polishing pad is a circular polishing pad and said plurality of regions are concentrically adjacent within said circular polishing pad.

17. The multi-region polishing pad of claim 11 wherein said polishing pad is a linear polishing pad and said plurality of regions are linearly adjacent within said linear polishing pad.

18. In a chemical mechanical polishing (CMP) machine, a method of polishing a wafer, the method comprising the steps of:

a) placing a wafer onto a customized polishing pad on a chemical mechanical polishing machine, said polishing pad having a first region and a second region;

- 5 d) moving said wafer selectively between said first region and said
second region such that an optimized polishing effect is achieved.

10 said first region of said polishing pad is firmer than said second region of said
polishing pad.

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